

# NEVER MISS A BEAT

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IMPROVING LONDON'S  
RESPONSE TO  
CARDIAC ARRESTS



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## INTRODUCTION

A cardiac arrest occurs when the electrical activity of the heart is altered in such a way that it causes the normal function of the heart to deteriorate<sup>1</sup>.

According to the British Heart Foundation, the most common cause of a cardiac arrest is an abnormal heart rhythm called 'ventricular fibrillation' (VF). This occurs when the electrical activity of a person's heart becomes irregular and causes the heart to stop pumping blood. The heart's usual pumping motion is replaced with an ineffective quivering one<sup>2</sup>.

A person suffering a cardiac arrest will suddenly lose consciousness and stop breathing normally. Therefore, unless another person is able to immediately deliver CPR, the victim will usually die within minutes.

Cardiac arrests and heart attacks are sometimes conflated. However, they are not the same thing.

While a cardiac arrest involves the alteration of the electrical activity of a heart, causing its normal function to deteriorate, a heart attack occurs when the fabric of the heart is damaged due to the loss of blood flow or other injury to the heart muscle.

The Community HeartBeat Trust (CHT), the national charity specialising in community defibrillation, defines a heart attack as the following:

*"A heart attack is where the fabric of the heart is damaged due to loss of blood flow or other injury to the heart muscle. Typically this may be due to a blockage of one of the vessels supplying food and oxygen to the heart itself, or it can be due to in rare cases as a result of a haemorrhage, either in the heart, but more often somewhere else in the body resulting in a lack of oxygen or blood to the heart."*<sup>3</sup>

In the cases of a cardiac arrest and a heart attack, the outcome is generally an interruption to the electrical flow of the heart<sup>4</sup>. Therefore, a person suffering a heart attack has a high risk of it developing into a cardiac arrest.

Unfortunately, cardiac arrests are not uncommon in London. Last year (2014/15) the London Ambulance Service (LAS) attended 10,211 cardiac arrest incidents<sup>5</sup>.

A significant reason for the relatively low survival rate is the limited window of time available to resuscitate a person once they have suffered a cardiac arrest.

According to the CHT, every minute that passes without the person receiving treatment



1. Community Defibrillation, A Guide to Councils, Published November 2015, The CHT

2. <https://www.bhf.org.uk/heart-health/conditions/cardiac-arrest>

3. The CHT, op. cit.

4. Ibid

5. CHT FOI Response, NHS England, *Proportion of patients discharged from hospital alive*

reduces their chance of survival by approximately 20-23 per cent<sup>6</sup>.

The London Ambulance Service, Metropolitan Police Service, London Fire Brigade and former Mayor of London, Boris Johnson, have undertaken various initiatives to improve public awareness of and access to potentially life-saving Public Access Defibrillators, i.e. Automated External Defibrillators (AED) available for use by members of the public in the event of a cardiac arrest, along with measures to improve London's response to cardiac arrests.

However, more can be done to increase the cardiac arrest survival rate in London.

## THE PROBLEM IN DETAIL

The London Ambulance Service's (LAS) annual cardiac arrest report gives us a clear picture of the issue in London.

The LAS measures its performance in this area by calculating the percentage of people who sustained a "return of spontaneous circulation" (ROSC) upon arrival at hospital<sup>7</sup>.

A ROSC is recorded when there is a resumption of cardiac activity associated with significant respiratory effort. The signs of ROSC include coughing, breathing, a detectable pulse and or a measureable blood pressure.

It is important to note that this measuring tool does not measure the percentage of people who went on to survive and fully recover after their cardiac arrest.

In 2014/15, the LAS' recorded ROSC rate for cardiac arrests was 31.5 per cent, a decrease of 1.3 per cent from the previous year<sup>8</sup>. LAS staff attended 10,211 cardiac arrests (406 more than the previous year) and attempted to resuscitate 4,665 patients. 54 per cent (5,546) of cardiac arrest incidents did not receive resuscitation<sup>9</sup>.

Regarding the cases where resuscitation was not attempted, 91 per cent of those cases involved the patient being recognised as deceased when the staff arrived<sup>10</sup>.

Furthermore, the number of patients discharged from a hospital to non-hospital location (also known as the "survival-to-discharge rate") decreased from 10.3 per cent, in the previous year, to 9 per cent<sup>11</sup>.

The general downward trajectory was replicated with the LAS' response times to cardiac arrests.

In 2014/15, the average response time for LAS staff to arrive at the scene of a cardiac arrest was 7.38 minutes, which is within the NHS' target<sup>12</sup>.

6. De Maio et al. (OPALS) *Ann Emerg Med* 2003; 42: 242

7. London Ambulance Service, *Cardiac Arrest Annual Report: 2014/15*

8. *Ibid*

9. *Ibid*

10. *Ibid*

11. *Ibid*

12. *Ibid*

However, this response time was nearly a minute longer than the average response time achieved in the previous year.

The average time it took for an LAS member of staff to use cardiopulmonary resuscitation (CPR) on a patient was 9 minutes and 11 seconds. Furthermore, the average time it took for an LAS member of staff to use an AED on a patient was 12 minutes and 39 seconds<sup>13</sup>.

In the context of cardiac arrests, the National Secretary of the CHT, Martin Fagan, told me that the 8 minute ambulance service target response time is “*irrelevant*”<sup>14</sup>.

Mr Fagan stated that this is because it generally takes around 3 minutes to activate an ambulance after the collapse of the patient, to the time that the ambulance is on route<sup>15</sup>.

Furthermore, according to NHS England, the 8 minute target time is only activated when the call, taken by the ambulance service staff, is categorised as ‘RED1’ or ‘RED2’<sup>16</sup>. RED1 and RED2 are the categories assigned to the highest priority calls received by the ambulance service<sup>17</sup>.

The founder of the Sudden Arrhythmic Death Syndrome charity (SADS UK), Anne Jolly, told me that according to the LAS, even if an ambulance crew is around the corner from a cardiac arrest incident, other factors may delay them delivering the care necessary to save the patient<sup>18</sup>.

Ms Jolly stated that upon arrival, ambulance staff still has to locate the patient and apply the AED onto them. Given that the window of time available to save a person suffering from a cardiac arrest is so low, these delays can be critical<sup>19</sup>.

It is important to note that the current LAS response times are understandable when one takes the size of London, along with its congestion, into consideration. However, regarding cardiac arrests, such response times do not stand the patient in good stead. This is especially true given the aforementioned evidence stated by the CHT regarding the reduction of an individual’s chances of surviving a cardiac arrest with every passing minute.

The CHT told me that when a person suffers a cardiac arrest, if they do not receive treatment within the NHS’ target time of 8 minutes, their chance of surviving decreases to approximately 7 per cent<sup>20</sup>.

Taking the limited amount of time to respond to cardiac arrests into consideration, an effective way of improving survival rates would be to increase the general public’s access to Public Access Defibrillators, along with a concentrated push to increase the number of people trained to use them and deliver CPR.

13. Ibid

14. Conversation with Martin Fagan, National Director, CHT, 31<sup>st</sup> May 2016

15. Conversation with Martin Fagan, National Director, CHT 31<sup>st</sup> May 2016 - “This is further supported by clinical research.” (DeMaio, Ann Emerg Med. 2003 Aug;42(2):242-50

16. Ambulance Service Quality Indicators, NHS England December 2015

17. <https://www.neas.nhs.uk/our-services/accident-emergency/ambulance-response-categories-explained.aspx>

18. Conversation with Anne Jolly, Founder of SADS UK, 12<sup>th</sup> May 2016

19. Ibid

20. DeMaio, Ann Emerg Med. 2003 Aug;42(2):242-50

SADS UK emphasises the importance of applying an AED to a person suffering a cardiac arrest as soon as possible. According to them, a person suffering a cardiac arrest should have an AED applied to them within three minutes<sup>21</sup>.

Furthermore, the CHT believes that treatment, using an AED, should begin as soon as possible following the point of collapse<sup>22 23</sup>.

It is encouraging to note that, last year, more cardiac arrest incidents received bystander CPR in London than ever before. 63.1 per cent of patients received treatment prior to the arrival of the LAS. This was an increase of 7.3 per cent on the previous year<sup>24</sup>.

The results of using a Public Access Defibrillator early were demonstrated in the LAS's data. For example, when a Public Access Defibrillator was available and used, 76.7 per cent of patients sustained a ROSC to hospital<sup>25</sup>. In addition, the survival-to-discharge rate increased to 58.6 per cent<sup>26</sup>.

Given the relatively low general survival/ROSC rate for cardiac arrests in London, the fact that the use of an AED increased the survival-to-discharge rate to 58.6 per cent demonstrates its effectiveness as a life-saving tool<sup>27</sup>.

Unfortunately, too few Londoners are receiving treatment from an AED when suffering a cardiac arrest.

For example, the number of people who received treatment from a Public Access Defibrillator in 2014/15 was 73. While this is a marked increase from 18 people in 2013/14, the fact that 73 out of 10,211 people received treatment from a Public Access Defibrillator demonstrates that there is room for improvement<sup>28</sup>.

The LAS have publicly expressed concerns that they are struggling to meet their 999 target response times, adding that this could lead to a worsening of the standard of care they are able to deliver to seriously ill Londoners<sup>29</sup>.

For example, in 2014/15, 56 per cent of priority "red" calls received a response within the target time, considerably below the 75 per cent target<sup>30</sup>.

Furthermore, the LAS stated that staff shortages led to approximately 6,000 fewer hours of patient care being delivered as recently as February 2016<sup>31</sup>.

This is a concern when considering the fact that the LAS are facing an increase in demand. For example, the LAS responded to 85,605 calls in February, 9,045 more than February

21. Conversation with Anne Jolly, Founder of SADS UK, 12<sup>th</sup> May 2016

22. In addition, the UK Resuscitation Council believes that an AED should be available to people wherever medical treatment happens to be more than 5 minutes away

23. <http://www.communityheartbeat.org.uk/why.php>

24. London Ambulance Service, Cardiac Arrest Annual Report: 2014/15

25. Ibid

26. Ibid

27. Ibid

28. Ibid

29. <http://www.standard.co.uk/news/health/ambulance-bosses-fear-999-response-times-crisis-is-damaging-patient-care-a3215091.html>

30. Ibid

31. Ibid

2015<sup>32</sup>.

Furthermore, the LAS' Non-Executive Director, Fergus Cass, expressed concern about the length of time it currently takes for LAS staff to reach patients suffering cardiac arrests or heart attacks<sup>33</sup>.

The difficulties faced by the LAS are compounded by the increasing level of demand they are expected to respond to. For example, it has been estimated that they are treating approximately over 1,500 critically ill patients every day<sup>34</sup>.

This picture is replicated nationally. For example, the number of calls to ambulances has more than doubled over the last decade to over 9 million a year<sup>35</sup>.

Another issue is that ambulance services are reportedly being made to wait in a queue before being able to hand over their patients upon arrival at Accident and Emergency centres<sup>36</sup>.

Considering that time is such a crucial factor in determining the patient's chances of survival, any delay in delivering care could prove to be fatal.

The evidence suggests that at a time when demand is outstripping supply for a service as important as that delivered by the LAS, it makes sense to increase the availability of Public Access Defibrillators available to the general public as well as increasing the pool of people who are trained and able to use them.

It is also important to increase the number of people who are trained to deliver CPR so that they can immediately deliver potentially life-saving treatment to the person suffering the cardiac arrest while they wait for the emergency services to arrive.

Administering CPR helps to maintain the flow of oxygen around the person's body until an AED can be used, or until the ambulance arrives.

## PUBLIC AWARENESS

Further measures are needed to raise the general level of awareness regarding cardiac arrests in London.

This was demonstrated through recent polling compiled by YouGov for the British Heart Foundation. For example, 44 per cent of respondents stated that they thought a cardiac arrest and a heart attack were different terms to describe the same condition<sup>37</sup>.

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32. Ibid

33. Ibid

34. [http://www.londonambulance.nhs.uk/news/news\\_releases\\_and\\_statements/teaming\\_up\\_with\\_london\\_fire\\_br.aspx](http://www.londonambulance.nhs.uk/news/news_releases_and_statements/teaming_up_with_london_fire_br.aspx)

35. <http://www.bbc.co.uk/news/uk-england-36381440>

36. Ibid

37. British Heart Foundation, Policy Statement, Creating a Nation of Lifesavers

## STEPS CURRENTLY TAKEN TO IMPROVE PATIENT OUTCOMES

While the survival rate for cardiac arrests in London remains stubbornly low, it is important to recognise the steps that have been taken to improve patient outcomes.

For example, in recent years there has been a concentrated effort to increase the number of AEDs in London along with the number of people trained to use them.

For example, the LAS has led the way in promoting the use of AEDs with their 'Shockingly Easy' campaign. This campaign, started in 2014, led to 1,000 extra AEDs being installed in shops, businesses and gyms across London<sup>38</sup>.

The former LAS Chairman, Richard Hunt, stated:

*"Every shop, gym, hotel and office in London should have a defibrillator so they're ready to save a London life. And they cost very little – it really is just the paper clip budget."*<sup>39</sup>

Furthermore, the LAS offers guidance and support to establishments which wish to buy, store and use an AED.

While the effort to increase the number of AEDs in shops, gyms, hotels and offices in London is an important step, where they are specifically placed within those locations is equally as important.

For example, the National Secretary of the CHT, Martin Fagan, told me that the trust's focus is to ensure that AEDs are placed in publicly accessible spaces, available to be used 24 hours a day, 7 days a week<sup>40</sup>.

Mr Fagan stated that a lot of AEDs found in cities are in 'closed spaces'. This means that if you were to go into a hotel or office and look for an AED, you will often find them behind the foyer or desks in an establishment that is closed to the general public<sup>41</sup>.

Mr Fagan's observation is reflected in City Hall in London, where the building's AED is located in the toilets on the lower ground floor<sup>42</sup>.

Mr Fagan added that these AEDs should be placed in highly visible and accessible locations within those premises in order to increase the likelihood for a member of the public to use them should a cardiac arrest occur nearby<sup>43</sup>.

38. [http://www.londonambulance.nhs.uk/calling\\_999/emergency\\_heart\\_care/cardiac\\_arrest/shockingly\\_easy\\_campaign.aspx](http://www.londonambulance.nhs.uk/calling_999/emergency_heart_care/cardiac_arrest/shockingly_easy_campaign.aspx)

39. Ibid

40. Conversation with Martin Fagan, National Director of the CHT, 31<sup>st</sup> May 2016

41. Ibid

42. Ibid

43. Ibid

## LONDON EMERGENCY SERVICES CO-RESPONDING TRIAL

Another encouraging development spearheaded by the LAS, in conjunction with the London Fire Brigade and the Metropolitan Police Service, is the new emergency service co-responding trial<sup>44</sup>.

The trial, which began on February 16<sup>th</sup> across four London boroughs, enables fire crews carrying AEDs, to respond to a “*small number of people in an immediately life threatening condition across Merton, Wandsworth, Newham and Lambeth*” until a paramedic arrives<sup>45</sup>.

The initiative encourages London’s emergency services to work together in an effort to improve response times and patient outcomes<sup>46</sup>.

There is early anecdotal evidence that the pilot is having a positive impact, specifically in the borough of Newham<sup>47</sup>.

In addition, the Metropolitan Police Service, in partnership with the LAS, has had 110 AEDs installed in police vehicles to give them the additional capability to respond to cardiac arrests<sup>48</sup>.

## MEASURES TAKEN BY THE PREVIOUS MAYOR OF LONDON, BORIS JOHNSON

In addition to the aforementioned steps taken by the LAS, Metropolitan Police Service and London Fire Brigade, the former Mayor of London campaigned to get more people across London trained in how to perform CPR and use an AED.

This campaign was conducted in the lead-up to the 2012 Olympic Games. The former Mayor, through his ‘*Team London*’ initiative, managed to train 1,000 volunteers using the British Heart Foundation’s ‘*Heartstart*’ course, a 2 hour skills course focusing on how to deliver CPR<sup>49</sup>.

The aforementioned measures introduced are encouraging. However, it cannot be ignored that the survival rates for cardiac arrest in London remains stubbornly low.

Given the prevalence of cardiac arrests in London, we should build on the initiatives spearheaded by the former Mayor, the LAS, the Metropolitan Police Service, and the London Fire Brigade.

44. [http://www.londonambulance.nhs.uk/news/news\\_releases\\_and\\_statements/teaming\\_up\\_with\\_london\\_fire\\_br.aspx](http://www.londonambulance.nhs.uk/news/news_releases_and_statements/teaming_up_with_london_fire_br.aspx)

45. Ibid

46. Ibid

47. [http://www.newhamrecorder.co.uk/news/co\\_responding\\_trial\\_saving\\_lives\\_in\\_newham\\_1\\_4493378](http://www.newhamrecorder.co.uk/news/co_responding_trial_saving_lives_in_newham_1_4493378)

48. [http://www.londonambulance.nhs.uk/news/news\\_releases\\_and\\_statements/teaming\\_up\\_with\\_london\\_fire\\_br.aspx](http://www.londonambulance.nhs.uk/news/news_releases_and_statements/teaming_up_with_london_fire_br.aspx)

49. [http://www.londonambulance.nhs.uk/news/news\\_releases\\_and\\_statements/mayor%E2%80%99s\\_ambassador\\_army\\_given.aspx?lang=en-gb](http://www.londonambulance.nhs.uk/news/news_releases_and_statements/mayor%E2%80%99s_ambassador_army_given.aspx?lang=en-gb)

**Recommendation 1** - *The Mayor of London should lobby the Government to make it mandatory for all public sector workers to receive training, as part of their induction, on how to administer cardiopulmonary resuscitation and use an automated external defibrillator.*

This policy would significantly increase the number of Londoners trained and ready to respond to a cardiac arrest, potentially saving more lives.

While an AED remains a crucial element in determining an individual's chances of surviving a cardiac arrest, in some cases, administering CPR can double the chances of survival from an out-of-hospital cardiac arrest<sup>50</sup>.

The consensus is clear, engendering a public response to cardiac arrests is a crucial step to increase London's survival rates. Given that time is such a critical factor in determining a person's chance of survival upon suffering a cardiac arrest, we need to create an environment where more people are encouraged to come to the person's aid in the event of it.

In addition, by increasing the number of Londoners able to administer life-saving care, this measure could result in a cost-saving for the NHS regarding hospital admissions in London<sup>51</sup>.

Martin Fagan from the CHT endorses this recommendation, stating that a crucial component in achieving better cardiac arrest survival rates is to encourage and foster a public response<sup>52</sup>.

The position of the CHT is that we should be aiming for a survival rate from hospital of between 50-60 per cent, which would mean a significant increase in the current LAS rates<sup>53</sup>.

## LONDON'S SCHOOLS RESPONSE TO CARDIAC ARRESTS

Another measure that could be adopted to increase the number of Londoners trained to deliver life-saving care would be to introduce CPR and AED training in all state-funded secondary schools<sup>54</sup>.

St John Ambulance, a leading first aid charity, in partnership with the British Heart Foundation and the British Red Cross, launched the 'Every Child a Lifesaver' campaign to make first aid training compulsory in all state-funded secondary schools<sup>55</sup>.

The Mayor of London should demonstrate leadership regarding this initiative and use his

50. Nolan, J.P et al (2010): European Resuscitation Council Guidelines for Resuscitation 2010, Resuscitation 2010; 81:1219-1451. Available at: <http://www.cprguidelines.eu/2010>

51. Ibid

52. Conversation with Martin Fagan, National Director of the CHT, 31st May 2016

53. Ibid

54. [http://www.london-fire.gov.uk/news/LatestNewsReleases\\_Bigheartedfirefightersgetschoolsdefibrillatorprotected.asp#.VyIMkvrK1t](http://www.london-fire.gov.uk/news/LatestNewsReleases_Bigheartedfirefightersgetschoolsdefibrillatorprotected.asp#.VyIMkvrK1t)

55. <http://www.sja.org.uk/sja/what-we-do/latest-news/news-archive/news-stories-from-2015/september-2015/every-child-a-lifesaver.aspx>

influence to encourage all secondary schools in London to provide CPR and AED training to its students.

***Recommendation 2 - The Mayor of London should encourage all state-funded secondary schools in London to provide cardiopulmonary resuscitation and defibrillator training to their students***

This measure would ensure that young Londoners continuously receive training on how to deliver CPR and use an AED, dramatically increasing the number of people able to deliver potentially life-saving care across London.

SADS UK would like to see secondary schools being encouraged to place AEDs within their premises, in line with their 'Big Shock' campaign to help save young lives<sup>56</sup>.

Furthermore, this policy appears to have widespread support. For example, a YouGov survey conducted for the British Heart Foundation in 2014 found that 82 per cent of people thought all young people should leave secondary school with CPR skills<sup>57</sup>.

Martin Fagan from the CHT stated that this recommendation should first be applied in primary schools, giving children the knowledge necessary to save lives. The training should then be reinforced in secondary schools, when the children are large enough to administer the treatment<sup>58</sup>.

Mr Fagan added that these courses could be carried out online or as part of pupils' information and communications technology (ICT) classes. In addition, they could be incorporated into physical education classes<sup>59</sup>.

Incorporating two hours of training into classes pupils already take would drive down any costs that may be incurred and provide an effective method of dramatically increasing the number of people trained to administer life-saving care<sup>60</sup>.

Additionally, Mr Fagan believes that every school teacher should have CPR and AED training incorporated into their compulsory first aid training when receiving their qualification<sup>61</sup>.

The CHT has offered to provide the online software to deliver free CPR and AED training to all pupils in London<sup>62</sup>.

CPR is already taught at school in several European countries, including Norway and Denmark. In addition, nineteen US states have passed laws making CPR a mandatory requirement for students before graduating. In Australia, several states including Queensland have included CPR as a mandatory requirement in their curricula<sup>63</sup>.

56. Conversation with Anne Jolly, Founder of SADS UK, 12th May 2016

57. British Heart Foundation, Policy Statement, Creating a Nation of Lifesavers

58. Conversation with Martin Fagan, National Secretary, CHT, 31<sup>st</sup> May 2016

59. Ibid

60. Ibid

61. Ibid

62. Ibid

63. British Heart Foundation, Policy Statement, Creating a Nation of Lifesavers

In places such as Norway and Seattle, where CPR is taught at school, the survival rates for out of hospital cardiac arrests are more than double that of the United Kingdom<sup>64</sup>.

The benefits of increasing the number of people able to perform CPR were highlighted this year when a man suffered a cardiac arrest near Lavender Hill Police Station in Battersea<sup>65</sup>. By the time the two Metropolitan Police Service Constables arrived on the scene, the man was already receiving CPR from a bystander.

PC Scott-Barrett, who arrived on the scene to help save the man's life, said the following:

*"I am hugely grateful to the bystander who was the first to deliver good quality CPR and I have no doubt that his efforts combined with the CPR provided by us and the London Fire Brigade played a significant part in the successful restarting of the patient's heart once the paramedics arrived."*<sup>66</sup>

This example demonstrates the importance of encouraging bystanders to intervene in such a situation if they know how to deliver CPR. This is because, as stated before, time is such a significant factor in determining the person's chances of survival following a cardiac arrest.

## TELEPHONE BOX DEFIBRILLATORS



Images provided by the Community HeartBeat Trust

Given that time is of the essence in determining whether a person has a chance of surviving a cardiac arrest, innovative measures are needed to increase the accessibility to life-saving AEDs for Londoners, as well as increasing the pool of people trained to deliver it.

Recently, a scheme in the village of Loweswater in Cumbria, undertaken by the CHT, received plaudits for taking a disused telephone box and installing an AED in it. A similar

64. Ibid

65. <http://www.standard.co.uk/news/london/police-officers-help-save-mans-life-after-he-collapses-near-police-station-a3200656.html>

66. Ibid

noteworthy initiative was taken in Wield Village in Hampshire, which had two telephone boxes converted into AED stations in 2013<sup>67</sup>.

This portable AED is available to the public 24 hours a day, seven days a week. It is secured in the telephone box in a high visibility yellow, vandal-resistant steel cabinet which can be opened with a combination code once the emergency services have been contacted through dialling 999<sup>68</sup>.

According to the British Heart Foundation, there is no need for prior training to safely use an AED. The machine gives clear spoken instructions to the user. In addition, once the AED has been placed in the correct position on the person's body, it detects the rhythm of their heart. This means that the AED will not deliver a shock unless one is needed<sup>69</sup>.

According to the Resuscitation Council, operators without any formal training have successfully used AED to save lives<sup>70</sup>.

It is their view that the use of AEDs should not be restricted to trained personnel<sup>71</sup>.

This initiative was also encouraged by British Telecom (BT) in 2008 when they introduced their 'Adopt a Kiosk' scheme as a way to preserve the iconic red kiosk<sup>72</sup>.

In 2009, BT partnered with the CHT to make disused telephone boxes available for AED usage in cooperation with the trust<sup>73</sup>.

This scheme allows a community to buy their local BT phone box, with the payphone removed, for just £1<sup>74</sup>.

To date, 3,000 phone boxes have been adopted by their local community across the country<sup>75</sup>.

Today, there are approximately 6,500 payphones in Greater London. However, in 2003, there were approximately 11,700<sup>76</sup>.

Given that telephone boxes are generally in decline, London's boroughs should take advantage of CHT/BT's 'Adopt a Kiosk' scheme and increase the number of Publically Accessible Defibrillators across the capital.

Doing so would provide a renewed practical purpose for a piece of iconic street furniture, which is slowly being eradicated.

67. <http://www.communityheartbeat.org.uk/news/uks-3000th-adopted-kiosk-given-new-life-saving-feature>

68. Conversation with Martin Fagan, National Secretary of the CHT, 31<sup>st</sup> May 2016 – "In London by agreement with LAS, the Community Heartbeat Trust delivers unlocked cabinets. In an ideal world all cabinets for defibrillators should not only be unlocked, but should also meet minimum standards. CHT have set a minimum standard for defibrillator cabinets called the ShockBox standard."

69. Conversation with Martin Fagan, National Secretary of the CHT, 31<sup>st</sup> May 2016, "However in a public place care needs to be taken about ethnic and religious requirements, as well as non-English speakers. This limits the number and type of defibrillators that can realistically be used for the public... However it is always recommended training should be undertaken, as whilst using a defibrillator is easy, CPR is not, and members of the public require reassurance as to the correct methods to use, and reassurance re the legalities"

70. <https://www.resus.org.uk/defibrillators/training-required-to-use-an-aed/>

71. Ibid

72. British Telecom Press Office Notification, 8 March 2016

73. Conversation with Martin Fagan, Director of the CHT, 31<sup>st</sup> May 2016

74. Conversation with Martin Fagan, Director of the CHT, 31<sup>st</sup> May 2016 – "Or alternatively, for CHT to adopt on their behalf"

75. <http://www.communityheartbeat.org.uk/news/uks-3000th-adopted-kiosk-given-new-life-saving-feature>

76. British Telecom Press Office Notification, 8 March 2016

In addition, given that the classic red kiosk was voted the greatest British design of all time in 2015, the Mayor of London could provide another reason to keep them stationed in London's high streets using this scheme<sup>77</sup>.

**Recommendation 3** - *The Mayor of London should encourage communities across London to utilise the Community HeartBeat Trust and British Telecom's 'Adopt a Kiosk' scheme and match-fund the installation of Public Access Defibrillators into disused telephone boxes.*

This would increase the number of AEDs available across London and potentially save lives. It would also provide a new use for a declining national icon.

This recommendation would also provide an effective tool for promoting good health in London. The Mayor could encourage communities to have a stake in how they promote health through collectively owning a piece of life-saving equipment at a relatively low cost<sup>78</sup>.

For example, the cost of an appropriate AED is generally around £1000 if used internally<sup>79</sup>. However, there are additional costs if used externally, including the cabinet costs, training costs, fitting, hosting agreements and VAT.

Typically, an external placement could cost up to £2000 if all aspects are addressed. The CHT advised us that there is also an ongoing support cost, which is generally £100 per annum per site<sup>80</sup>.

Regarding any safety concerns which may arise (should this recommendation be adopted), the LAS suggest that very few Public Access Defibrillators are stolen or vandalised<sup>81,82</sup>.

By encouraging communities to take advantage of the existing schemes promoting this initiative, the Mayor of London could show genuine leadership in this area. In addition, this recommendation could help reduce the health inequalities associated with the performance of London's boroughs in responding to cardiac arrests.

The initiative would also provide a useful awareness-raising tool for Londoners regarding cardiac arrests.

Anne Jolly, the founder of SADS UK endorses this recommendation. Ms Jolly told me that given that a lot of communities across the country have undertaken this initiative, there is no reason why it should not be replicated across London<sup>83</sup>.

77. <http://www.independent.co.uk/arts-entertainment/top-25-british-designs-revealed-the-iconic-red-phone-box-is-voted-nations-favourite-10111569.html>

78. Conversation with Anne Jolly, Founder of SADS UK, 12th May 2016, "the phone box can be adopted in two ways, the council or governing body can adopt the structure or adopt the structure and the power supply. Taking the first option means that only a cabinet from CHT can be used. The second option opens up the usage of cabinets from most cabinet providers."

79. Conversation with Martin Fagan, Director of the CHT, 31<sup>st</sup> May 2016

80. Conversation with Martin Fagan, Director of the CHT, 31<sup>st</sup> May 2016

81. British Heart Foundation, Policy Statement, Creating a Nation of Lifesavers

82. Conversation with Martin Fagan, National Secretary of the CHT, 31<sup>st</sup> May 2016 - "the evidence from the rest of the UK differs"

83. Conversation with Anne Jolly, Founder of SADS UK, 12th May 2016

Furthermore, the CHT, which is the leading charity regarding the instillation of Public Access Defibrillators, endorses this idea. They are the preferred partner to place AEDs in kiosks, and have an agreement in place with BT who will provide free electricity to the converted telephone box for the first 7 years, if the CHT administer the conversion<sup>84</sup>.

However, it is important to consider the various specifications that would need to be met in order for a conversion to be successful and sustainable.

The CHT has developed a set of criteria that should be followed if a community wishes to convert a disused telephone box into an AED station. These reflect the contractual requirements from BT, as well as the best practice for communities to ensure a safe and liability free placement<sup>85</sup>.

For example, due to the lack of electrical earthing in a kiosk, the cabinets should be low-voltage as a safety precaution. The CHT has an agreement in place with BT that the trust will only use low voltage cabinets in kiosks. This means that all cabinets placed in telephone boxes should have a voltage capacity range limited between 12-24 volts<sup>86</sup>. Cabinets should also be heated to maintain the equipment in line with the manufacturer's recommendations<sup>87</sup>.

The British Heart Foundation supports the provision of AEDs in public places. According to them, they should be placed in locations where they are easily accessible by the public in an emergency.<sup>88</sup>

Given that it is near impossible to predict where a cardiac arrest will occur, this could be achieved through working with the LAS to determine where there is a lack of immediate access to medical support<sup>89</sup>.

In addition, as a matter of necessity as well as a useful awareness-raising tool, the telephone boxes should be well sign-posted.

## DEFIBRILLATORS INSTALLED WITHIN PUBLIC/PRIVATE BUILDINGS

Currently, there is no legislation stating where AEDs should be located<sup>90</sup>.

By contrast, fire extinguishers are statutorily required in every building, and rightly so. However, given that 30 people died as a result of a fire in 2014/15 compared to 10,211 people who suffered an out-of-hospital cardiac arrest, the case to introduce such a requirement in certain public buildings is compelling<sup>91</sup>.

84. Conversation with Martin Fagan, National Secretary of the CHT, 31<sup>st</sup> May 2016

85. Ibid

86. Ibid

87. Ibid

88. Conversation with the British Heart Foundation, 9<sup>th</sup> March 2016

89. Conversation with Martin Fagan, National Secretary of the CHT, May 31<sup>st</sup> 2016, "CHT suggest that as Cardiac Arrest is largely idiopathic - i.e. impossible to predict where they will occur - the criteria should be where there is a lack of immediate access to medical support rather than solely large numbers of people."

90. Conversation with the British Heart Foundation, 9<sup>th</sup> March 2016

91. [http://www.london-fire.gov.uk/news/LatestNewsReleases\\_fire-deaths-cut-in-half-says-london-fire-brigade.asp#.VyldTfkrK1u](http://www.london-fire.gov.uk/news/LatestNewsReleases_fire-deaths-cut-in-half-says-london-fire-brigade.asp#.VyldTfkrK1u)

**Recommendation 4** - *The Mayor of London should lobby the Government to introduce legislation requiring all public sector buildings to have a Public Access Defibrillator installed in them.*

Another way the Mayor of London could show leadership on this issue would be to lobby the Government to ensure that all buildings within the Greater London Authority family has a suitable AED installed in them.

**Recommendation 5** - *The Mayor of London should lobby the Government to ensure that all buildings that are part of the GLA family have a Public Access Defibrillator installed in them, with a full governance system in place.*

This measure would include ensuring that each of London's 270 underground stations has an AED installed. It is important to note that thanks to a concerted effort to do so, there are now 146 stations in Transport for London's network which have an AED installed in them<sup>92</sup>.

By adopting this recommendation, the Mayor of London would show genuine leadership on this issue by setting an example for all of London.

Martin Fagan told me that the Mayor should set up an AED station outside of City Hall as a public statement of intent to Londoners, demonstrating that London is ready to improve cardiac arrest survival rates<sup>93</sup>.

In addition, it should also be noted is that there is currently no legal requirement for AEDs to be stored in schools, further outlining the general gaps regarding the response to cardiac arrests in the United Kingdom<sup>94</sup>.

## LACK OF PUBLIC CONFIDENCE

For a general member of the public, responding to a cardiac arrest may be a daunting prospect. Indeed, many could be forgiven for feeling reticent at the prospect of having to intervene during an incident.

For example, Anne Jolly, the founder of SADS UK stated that when people witness a cardiac arrest, they generally do not know what to do<sup>95</sup>.

This was reflected in the YouGov poll conducted for the British Heart Foundation which found that out of 47 per cent of people who said that they had received formal CPR training, only 29 per cent stated that they would feel confident performing CPR on a family member or friend<sup>96</sup>. Furthermore, only 22 per cent would feel confident performing CPR

92. London Ambulance Service, Cardiac Arrest Annual Report: 2014/15

93. Conversation with Martin Fagan, National Secretary of the CHT, 31st May 2016

94. [http://www.london-fire.gov.uk/news/LatestNewsReleases\\_Bigheartedfirefightersgetschoolsdefibrillatorprotected.asp#.VwJsefkrK1s](http://www.london-fire.gov.uk/news/LatestNewsReleases_Bigheartedfirefightersgetschoolsdefibrillatorprotected.asp#.VwJsefkrK1s)

95. Conversation with Anne Jolly, Founder of SADS UK, 12<sup>th</sup> May 2016

96. British Heart Foundation, Policy Statement, Creating a Nation of Lifesavers

on a stranger<sup>97</sup>.

The LAS suggested that many businesses can be reluctant to purchase an AED because they are worried that they may do more harm than good<sup>98</sup>.

The public should be aware of the fact that there are no statutory legal provisions in the UK relating to the practice of resuscitation or defibrillation<sup>99</sup>.

According to the Resuscitation Council, a person who attempts resuscitation will only be liable for damages if their intervention “*directly causes injury which would not otherwise have occurred*”<sup>100</sup>.

Considering the fact that in the event of a cardiac arrest, where without resuscitation the victim would almost certainly die, the risk of incurring such liability is “*extremely small*”<sup>101</sup>.

This hypothesis is born out in reality. According to the Resuscitation Council, there have been no reported cases where a victim has successfully sued someone who came to their aid during an emergency<sup>102</sup>.

Furthermore, according to Martin Fagan from the CHT, the public are now protected as a result of the ‘SARAH’ legislation introduced in April 2015<sup>103</sup>. According to Mr Fagan, any individual calling 999 who has been instructed to act on a patient with CPR or an AED is also covered by the NHS insurance, and are thus fully protected<sup>104</sup>.

However, Mr Fagan believes that the legislation has been poorly communicated, which helps to explain why relatively few people feel confident or prepared to come to an individual’s aid should they be suffering a cardiac arrest.

A renewed awareness drive is needed to allay the fears the general public may have regarding cardiac arrests. It should be known, beyond doubt, that in the event of a cardiac arrest, if one chooses to intervene, that individual can do so knowing that they are protected by the law.

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97. Ibid

98. <http://www.iosh.co.uk/News/Defibrillators-make-business-sense-and-help-save-lives-say-IOSH.aspx>

99. ‘The legal status of those who attempt resuscitation’, The Resuscitation Council, August 2010

100. Ibid

101. Ibid

102. Ibid

103. Conversation with Mark Fagan, National Secretary of the CHT, 31st May 2016

104. Ibid

## CONCLUSION

The aforementioned evidence demonstrates the extent to which cardiac arrests are an issue in London.

While the LAS, Metropolitan Police Service, London Fire Brigade and the former Mayor of London, Boris Johnson, collectively took commendable measures to improve patient outcomes, this report has offered practical solutions to produce a sustainable increase in cardiac arrest survival rates.

At a time when our emergency services are facing challenging financial conditions, coupled with an increasing population and congestion, these measures are necessary to engender a big society approach to increase survival rates and reduce the pressure on those services.

Through implementing these recommendations, the Mayor of London can provide leadership on this issue and help fulfil his objective to empower individuals and communities to improve London's health and well-being as part of his Health Inequalities Strategy<sup>105</sup>.

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105. <https://www.london.gov.uk/what-we-do/health/health-inequalities/tackling-londons-health-inequalities>

## RECOMMENDATIONS

**RECOMMENDATION #1** - The Mayor of London should lobby the Government to make it mandatory for all public sector workers to receive training, as part of their induction, on how to administer cardiopulmonary resuscitation and use an automated external defibrillator.

**RECOMMENDATION #2** - The Mayor of London should encourage all state-funded secondary schools in London to provide cardiopulmonary resuscitation and defibrillator training to their students

**RECOMMENDATION #3** - The Mayor of London should encourage communities across London to utilise the Community HeartBeat Trust and British Telecom's 'Adopt a Kiosk' scheme and match-fund the installation of Public Access Defibrillators into disused telephone boxes.

**RECOMMENDATION #4** - The Mayor of London should lobby the Government to introduce legislation requiring all public sector buildings to have a Public Access Defibrillator installed in them.

**RECOMMENDATION #5** - The Mayor of London should lobby the Government to ensure that all buildings that are part of the GLA family have a Public Access Defibrillator installed in them, with a full governance system in place.



## FEEDBACK

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